REMARKS

In view of the following discussion, the Applicants submit that none of the claims now pending in the application are unpatentable under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of these claims are now in allowable form.

I. REJECTION OF CLAIM 35 UNDER 35 U.S.C § 103

Claim 35 stands rejected as being unpatentable over the Rolia patent (U.S. Patent No. 7,310,672, issued December 18, 2007, hereinafter "Rolia") in view of the Agarwal et al. patent application (U.S. Patent Application Publication No. 2003/0028642, published February 6, 2003, now U.S. Patent No. 7,174,379, hereinafter "Agarwal"). The Applicants respectfully traverse the rejection.

The Examiner's attention is respectfully directed to the fact that Rolia and Agarwal singly or in any permissible combination, fail to teach, show, or suggest computing, as a part of determining a resource allocation, the cost of re-allocating a resource from one resource-using entity to another, where the resource using entities use the resources (which are hosted by a data center) that are allocated to them to handle customer demands, as positively claimed by the Applicants.

Neither Rolia nor Agarwal discusses the need to account for the cost of re-allocating resources in determining the actual allocations. As discussed in the Applicants' Specification (e.g., at least at paragraph 0023), re-allocating a resource from one resource-using entity to another may come with a cost, for example in terms of delay or machine downtime. Accounting for such costs when determining a new allocation of resources helps to minimize service disruptions to customers and maintain optimal performance of a data processing system. Rolia and Agarwal simply do not address this fact.

The Examiner acknowledges in the Final Office Action that "Rolia is silent ... wherein the computing further comprises computing a cost that is expected to be incurred as a result of said re-allocating" (Final Office Action, Page 4). The Examiner submits, however, that this gap in the teachings of Rolia is bridged by Agarwal. The

Applicants respectfully disagree.

Although Agarwal discusses a plurality of costs that are generally associated with managing resources, none of these costs comprises the cost of re-allocating a given resource from one resource-using entity to another, as claimed by the Applicants. By contrast, the "costs" that are discussed by Agarwal include monetary costs (*i.e.*, "the cost burden of expensive machines and software," Agarwal, paragraph 0008), "the cost of migrating a resource instance from one [hosting] machine to another," (Agarwal, paragraph 0196), "the cost of hosting [load]" (Agarwal, paragraph 0204), "costs of adding or removing a client" (Agarwal, paragraph 0240), and "communication cost[s]" (Agarwal, paragraph 0290). None of these costs comprises the cost of re-allocating a given resource from one resource-using entity to another. Moreover, the word "cost" does not even appear in any of the specific portions of Agarwal that are cited by the Examiner. Thus, the combination of Rolia and Agarwal (as taught by Agarwal) fails to disclose or suggest computing, as a part of determining a resource allocation, the cost of re-allocating a resource from one resource-using entity to another, where the resource using entities use the resources (which are hosted by a data center) that are allocated to them to handle customer demands, as positively claimed by the Applicants.

Applicants' independent claim 35 specifically recites:

> 35. An automated method for allocating resources among a plurality of resource-using computational entities in a data processing system, where the resources and the plurality of resource-using computational entities are hosted by a data center that provides computing services to a plurality of customers, the method comprising:
> establishing a service-level utility for each of said plurality of resource-using computational entities, wherein the service-level utility is representative of an amount of business value obtained by each of said plurality of resource-using computational entities for one or more levels of performance and demand associated with each resource-using computational entity;
> transforming said service-level utility into a resource-level utility for each of said plurality of resource-using computational entities, wherein the resource-level utility is representative of an amount of business value obtained by each of said plurality of resource-using computational entities when a quantity of said resources is allocated to the resource-using computational entity, wherein the resource-level utility indicates, for at least one of said plurality of resource-using computational entities, an estimated cumulative discounted or undiscounted

future utility starting from current state descriptions of said at least one resource-using computational entity, wherein said estimated cumulative discounted or undiscounted future utility is trained on a temporal sequence of observed data using an adaptive machine learning procedure;

aggregating resource-level utilities of all of said plurality of resource-using computational entities;

computing a resource allocation from said resource-level utilities, as aggregated, by executing an optimization method to maximize a total utility of said data processing system, wherein said resource allocation involves re-allocating at least one of said resources from one of said plurality of resource-using computational entities to another of said resource-using computational entities, wherein said optimization method comprises a standard linear or nonlinear algorithm, and wherein said computing further comprises computing a cost that is expected to be incurred as a result of said re-allocating; and

executing and conveying to the plurality of resource-using computational entities said resource allocation, where each of the plurality of resource-using computational entities uses said resource allocation to handle demands from the plurality of customers. (Emphasis added)

As Rolia and Agarwal fail to teach or suggest computing, as a part of determining a resource allocation, the cost of re-allocating a resource from one resource-using entity to another, where the resource using entities use the resources (which are hosted by a data center) that are allocated to them to handle customer demands, as positively claimed by the Applicants, Rolia in view of Agarwal fails to render obvious the Applicants' independent claim 35. As such, the Applicants respectfully request the rejection of claim 35 under 35 U.S.C. §103 be withdrawn.

II. CONCLUSION

Thus, the Applicants submit that all of the presented claims fully satisfy the requirements of 35 U.S.C. §103. Consequently, the Applicants believe that all of the presented claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the maintenance of the final action in any of the claims now pending in the application, it is requested that the Examiner telephone Kin-Wah Tong, Esq. at (732) 842-8110 so that

appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

May 27, 2009
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